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Peter Nord

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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/579,374
Filing Date: May 12, 2006
Appellant(s): NORD ET AL.

John Smith-Hill (Reg. No. 27,730)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 17 December 2009 appealing from the Office action mailed 29 April 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:
Claims 23-32 are rejected and pending.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The rejection of claim 30 under 35 USC 112, first paragraph, and the rejections of claims 33-35 under 35 USC 103(a). It is noted that claims 33-35 are cancelled.

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

4,595,421	REDHEAD ET AL.	6-1986
4,840,710	MIDDLELIN ET AL.	6-1989
CA 2164910	BONDEROFF	7-1997

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Appellants are advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 23-24, 26-28, 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Redhead et al (US 4,595,421) in view of Middlin et al (US 4,840,710).

For claims 23-24, 26, 30 and 31, Redhead et al teach an apparatus for removing deposits from a surface of an electrode (abstract) comprising at least one rotatable

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member (read as stripping element, Fig.5, #10, col.7, L.6-7) that is turnable about a horizontal axis spaced from the electrode (Fig.5); a stripping element (Fig.5, #10 and #18 as a whole) having a fingers (read as an end that is spaced from the horizontal axis/sliding element, Fig.5, #18, col.7, L.15) that moves vertically relative to the electrode during turning of the rotatable member and engages the deposit on the surface of the electrode intermediate a lower and upper edge of the electrode (Fig.5).

Redhead et al remain silent about a control element coupled drivingly to the stripping element for turning the stripping element.

However, examiner takes official notice that providing a control element, for example electric motor, coupled drivingly to the stripping element for turning the rotatable member (read as stripping element) is well known in the art of brush cleaning.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Redhead et al by adding a control element, such as electric motor, coupled drivingly to the stripping element for turning the stripping element successfully.

Redhead et al do not teach a support structure for supporting the electrode substantially stationarily in generally vertical orientation, at least one element for restraining a lower edge of the electrode against horizontal movement; and at least one element for restraining an upper edge of the electrode against horizontal movement; and whereby cooperation of the stripping element and the elements for restraining the lower and upper edges of the electrode against horizontal movement causes bending of the electrode.

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Middlin et al teach a device and technique for stripping deposit from an electrode (abstract) comprising a support structure for supporting the electrode (Fig. I, #1, col.2, L.3) substantially stationarily in generally vertical orientation having lower reaction bars (read as at least one element, Fig. I, #8 and #9, col.2, L.11) for restraining a lower edge of the electrode against horizontal movement; and upper reaction bars (read as at least one element, Fig. I, #6 and 7, col.2, L.10) for restraining an upper edge of the electrode against horizontal movement; and bending of the electrode while having the reaction bars to restraining the lower and upper edges of the electrode against horizontal movement in cooperation with hydraulic rams (Fig. I, #10 and #11) (Fig.1 and Fig.2, read as cooperation of the stripping element and the elements for restraining the lower and upper edges of the electrode against horizontal movement causes bending of the electrode).

It would have been obvious at the time the invention was made to utilize a support structure for supporting the electrode substantially stationarily in generally vertical orientation, at least one element for restraining a lower edge of the electrode against horizontal movement; and at least one element for restraining an upper edge of the electrode against horizontal movement; and whereby cooperation of the stripping element and the elements for restraining the lower and upper edges of the electrode against horizontal movement causes bending of the electrode as inspired by Middlin et al to enhance cleaning efficiency.

For claims 27-28, note that Redhead et al teach comprising first and second stripping elements for engaging opposite respective surface of the electrode (col.8, L.10-17).

For claim 32, Redhead et al teach a method for removing a deposit on a surface of an electrode comprising the steps of providing at least one rotatable member (read as stripping element, Fig.5, #10, col.7, L.6-7) that is turnable about a horizontal axis spaced from the electrode (Fig.5); and turning a stripping element (Fig.5, #10 and #18 as a whole) having a fingers (read as an end that is spaced from the horizontal axis/sliding element, Fig.5, #18, col.7, L.15) that moves vertically relative to the electrode during turning of the rotatable member and engages the deposit on the surface of the electrode intermediate a lower and upper edge of the electrode (Fig.5).

Redhead et al do not teach the steps of supporting the electrode substantially stationary in a generally vertical orientation; restraining upper and lower edges of the electrode against horizontal movement; and causes bending of the electrode.

However, Middlin et al teach a concept for stripping deposit from an electrode providing the steps of supporting the electrode substantially stationary in a generally vertical orientation (Fig.1 and Fig.2); restraining upper and lower edges of the electrode against horizontal movement (Fig.1 and Fig.2); and causes bending of the electrode (Fig.1 and Fig.2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Redhead et al by having the step of providing the steps of supporting the electrode substantially stationary in a generally

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vertical orientation; restraining upper and lower edges of the electrode against horizontal movement; and having the stripping element of Redhead et al to press against the electrode to cause bending as inspired by Middlin et al to enhance separation between the deposit and the electrode, thus improves cleaning efficiency.

Claims 23-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over CA 2164910 in view of Middlin et al (US 4,840,710).

For claims 23, 26, 30 and 31, CA 2164910 teaches an apparatus for removing a deposit on an electrode comprising at least one stripping element (Fig. I, #3) that is turnable about a horizontal axis spaced from the electrode (Fig. I, #50), the stripping element having an end that is spaced from the horizontal axis and moves vertically relative to the electrode during turning of the stripping element and engages the deposit on the surface of the electrode intermediate the lower and upper edges of the electrode (Fig. I, #12 or #13 or #14 or #16).

CA 2164910 remains silent about a control element coupled drivingly to the stripping element for turning the stripping element.

However, examiner takes official notice that providing a control element, for example electric motor, coupled drivingly to the stripping element for turning the rotatable member (read as stripping element) is well known in the art of brush cleaning.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of CA 2164910 by adding a control

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element, such as electric motor, coupled drivingly to the stripping element for turning the stripping element successfully.

CA 2164910 does not teach a support structure for supporting the electrode substantially stationarily in generally vertical orientation, at least one element for restraining a lower edge of the electrode against horizontal movement; and at least one element for restraining an upper edge of the electrode against horizontal movement; and whereby cooperation of the stripping element and the elements for restraining the lower and upper edges of the electrode against horizontal movement causes bending of the electrode.

Middlin et al teach a device and technique for stripping deposit from an electrode (abstract) comprising a support structure for supporting the electrode (Fig. I, #1, col.2, L.3) substantially stationarily in generally vertical orientation having lower reaction bars (read as at least one element, Fig. I, #8 and #9, col.2, L.11) for restraining a lower edge of the electrode against horizontal movement; and upper reaction bars (read as at least one element, Fig. I, #6 and 7, col.2, L.10) for restraining an upper edge of the electrode against horizontal movement; and bending of the electrode while having the reaction bars to restraining the lower and upper edges of the electrode against horizontal movement in cooperation with hydraulic rams (Fig. I, #10 and #11) (Fig.1 and Fig.2, read as cooperation of the stripping element and the elements for restraining the lower and upper edges of the electrode against horizontal movement causes bending of the electrode).

It would have been obvious at the time the invention was made to utilize a support structure for supporting the electrode substantially stationarily in generally vertical orientation, at least one element for restraining a lower edge of the electrode against horizontal movement; and at least one element for restraining an upper edge of the electrode against horizontal movement; and whereby cooperation of the stripping element and the elements for restraining the lower and upper edges of the electrode against horizontal movement causes bending of the electrode as inspired by Middlin et al to enhance cleaning efficiency.

For claims 24-25, 28 and 29, note that CA 2164910 teaches the stripping element includes a sliding element (Fig. I, #12 or #13 or #14 or #16) at the end of the stripping element for engaging the surface of the electrode, wherein the sliding element is a roller (Fig. I, Fig.4 and Fig.5).

For claims 27, note that CA 2164910 teaches comprising first and second stripping elements for engaging opposite respective surface of the electrode (Fig. I).

For claim 32, CA 2164910 teaches a method for removing a deposit on an electrode comprising the steps of providing at least one stripping element that is turnable about a horizontal axis spaced from the electrode (Fig. I); and turning the stripping element about the horizontal axis whereby an end of the stripping element about the horizontal axis, where by an end of the stripping element that is spaced from the horizontal axis engages the deposit on the surface of the electrode intermediate the lower and upper edge of the electrode and moves vertically relative to the electrode (Fig.4 or Fig.5, P.16, L.26-P.17, L.9).

However, Middlin et al teach a concept for stripping deposit from an electrode providing the steps of supporting the electrode substantially stationary in a generally vertical orientation (Fig.1 and Fig.2); restraining upper and lower edges of the electrode against horizontal movement (Fig.1 and Fig.2); and causes bending of the electrode (Fig.1 and Fig.2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of CA 2164910 by having the step of providing the steps of supporting the electrode substantially stationary in a generally vertical orientation; restraining upper and lower edges of the electrode against horizontal movement; and having the stripping element of CA 2164910 to press against the electrode to cause bending as inspired by Middlin et al to enhance separation between the deposit and the electrode, thus improves cleaning efficiency.

(10) Response to Argument

Regarding the first ground of rejection (see the Appeal Brief at page 4, last paragraph), appellants correctly note that the rejection of claim 30 under 35 USC 112, first paragraph, should not be maintained (see the Appeal Brief at page 5, paragraphs beginning "1. The rejection of claim 30" and "2. Claim 30, as now amended"). This rejection is withdrawn as discussed above in the section "(6) Grounds of Rejection to be Reviewed on Appeal".

Regarding the second ground of rejection (see the Appeal Brief at page 5, first paragraph), initially it is noted that the rejections of claims 33-35 under 35 USC 103(a) are withdrawn, as discussed above in the section "(6) Grounds of Rejection to be Reviewed on Appeal".

Regarding the second ground of rejection, and with respect to claim 23 (see the Appeal Brief at page 6, under the heading "3a. The subject matter of claim 23"), appellants first apparently argue that Redhead (US 4,595,421) is nonanalogous art since, it is alleged, Redhead is not concerned with removing a metal that has been electrolytically deposited on a cathode (see the Appeal Brief at page 6, paragraph beginning "Redhead et al is not concerned"). Initially it is noted that claim 23 is drawn to an apparatus, rather than a method. Thus it is the structural difference between the claimed invention and the prior art, rather than the disclosure of intended use, which is patentably significant.

The examiner maintains the position that Redhead is analogous art. It has been held that a prior art reference must either be in the field of appellants' endeavor or, if not, then be reasonably pertinent to the particular problem with which the appellants were concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both Redhead and appellants are in the field of apparatuses which are useful for cleaning electrodes (see, e.g. the Redhead abstract and claim 1 of the present application).

Further, it is noted that the features upon which appellants rely (i.e., the deposit to be removed is a metal on a cathode) are not recited in the rejected apparatus claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Although not germane to the issue of rejection here, it is noted that Redhead, in fact, does disclose using the apparatus wherein the deposit is a metal (see the Redhead abstract).

Appellants next argue that the applied art does not teach or suggest an apparatus wherein the electrode is bent (see the Appeal Brief at page 6, last paragraph), initially it is noted that the electrode is not part of claimed apparatus.

Further, it is noted that Middlin (US 4,840,710) discloses an apparatus wherein the electrode is bent (see the Middlin abstract and Fig. 1 and the Office action mailed 29 April 2009 at paragraph bridging pages 4 and 5). The position of the Examiner is that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Here, it is Middlin, rather than Redhead, which provides this feature (see the Office action mailed 29 April 2009 at page 4, last full paragraph, to page 5, first paragraph).

Appellants next argue one of ordinary skill in the art would see no advantage in including a mechanism for bending an electrode as per the Middlin teaching in the apparatus of the Redhead teaching since, it is alleged, the references disclose their

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respective apparatuses as being useful for related, but different, processes (see the Appeal Brief, paragraph bridging pages 7 and 8). The Examiner maintains the position that the skilled artisan would have found it advantageous to combine the references in order to increase the range of electrode deposit types that can be successfully cleaned by the apparatus, e.g., flexible and inflexible electrodes, cohesive and non-cohesive, etc.

Appellants' next argument (see the Appeal Brief at page 8, last paragraph) is not entirely clear. Appellants first cite the Office as stating the claims are not restricted to particulars of the deposits (which particulars are not recited in the claims), then state that the scope of the present claims is not relevant to the inquiry of whether it would have been obvious to combine the references of the applied art and, finally, the appear to allege improper hindsight (see the Appeal Brief at page 8, last paragraph). Initially, it is noted that it is not clear how such a citation by the Office is evidence of improper hindsight. At any rate, the Examiner maintains the position that he has not looked to the appellants' disclosure in order to supply a motivation to combine the references of the applied art.

Appellants argue that modifying Redhead in view of the Middlin teaching would result in apparatus which is deficient in being used for purposed disclosed in the references since, it is alleged, the apparatuses disclosed by Redhead and Middlin are different (see the Appeal Brief at page 9, first paragraph). The assertion that the Redhead and Middlin apparatuses are different is, apparently, the sole support for the contention that the apparatus of the Redhead/Middlin teachings would be deficient.

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Initially, it is noted that arguments of counsel cannot take the place of factually supported objective evidence. MPEP 2145. The Examiner maintains the position that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Regarding the second ground of rejection, and with respect to claim 32 (see the Appeal Brief at page 10, paragraph beginning "3b. The subject matter of claim 32"), appellants' first argue that Redhead teaches away from removing a metal deposit from a cathode since, it is alleged Redhead discloses removal of metal from a cathode at col. 1, lines 10-22, as a counterpoint to the disclosed invention (see the Appeal Brief, paragraph bridging pages 10 and 11). The position of the Examiner is that the Redhead disclosure of removing a metal deposit from a cathode is provided as background, rather than a teaching way. Indeed, in the paragraph immediately following the portion cited by appellants, Redhead discloses removal of metal from anodic surfaces (see, e.g., Redhead at col. 1, lines 43-46). Further evidence that these two paragraphs refer to the background comes from a reading of their introductory phrases which are, "In many commercially used electrolytic processes", (col. 1, line 10) and "Two forms of coating or deposit generally are encountered" (col. 1, lines 23 and 24), respectively. A Redhead disclosure of cleaning an anode does not amount to a teaching away from cleaning a cathode. As for the contention the Redhead is concerned with the removal

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of nonmetallic material (see the Appeal Brief, paragraph bridging pages 10 and 11), it is noted that Redhead also discloses the removal of metallic material (see, e.g., Redhead at claims 8, 9, 11-13, 19-21, 23 and 24). It is noted that removal of metal from a cathode is also disclosed by Middlin (see, e.g., the Middlin abstract). It is further noted that the present specification does not show that it is critical that either: a) the deposit removed must be a metal deposit; or b) the electrode must be a cathode (see, e.g., the present specification at page 1, lines 4 and 5 and note that, prior to the amendment filed 25 August 2009, claim 32 did not require that the deposit be a metal deposit or that the electrode be a cathode).

Regarding the second ground of rejection, and with respect to claims 33-35 (see the Appeal Brief at page 11, paragraph beginning "3c. The rejections of claims 33-35"), appellants correctly state that the rejections of these claims has been rendered moot by their cancellation. The rejections of claims 33-35 under 35 USC 103(a) are withdrawn, as discussed above in the section "(6) Grounds of Rejection to be Reviewed on Appeal".

Regarding the third ground of rejection (see the Appeal Brief at page 5, paragraph beginning "Claims 23-34 have been rejected ... over Canadian Patent Application No. 2,164,910"), initially it is noted that the rejections of claims 33-35 under 35 USC 103(a) are withdrawn, as discussed above in the section "(6) Grounds of Rejection to be Reviewed on Appeal". Appellants present no further arguments here, but put forth that one of ordinary skill in the art would not have combined Bonderoff (CA

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2164910) with Middlin for the same reason that one would, allegedly, not have combined Redhead with Middlin, i.e. because Bonderoff discloses cleaning an anode, rather than a cathode (see the Appeal Brief at page 11, last full paragraph).

Accordingly, the Examiner maintains the position that one of ordinary skill in the art would have found it obvious to combine the Middlin and Bonderoff teachings for reasons similar to those discussed with respect to the Redhead/Middlin combination. For example, Bonderoff discloses cleaning electrodes generally (see the Bonderoff abstract) and the disclosure wherein the electrode is an anode is merely a particular embodiment.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Eric Golightly/

Examiner, Art Unit 1714

Conferees:

/Michael Kornakov/

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